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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
PORTKA, GARY J	
ART UNIT	**PAPER NUMBER**
2188	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/752,861	DAVIS ET AL.	
	Examiner	Art Unit	
	Gary J. Portka	2188	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 November 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13 and 16-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *1-12* is/are allowed.

6)☒ Claim(s) *13 and 16-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/ are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☒ Interview Summary (PTO-413) Paper No(s)/Mail Date. *hereiwth* .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1, 2, 4, 5, 9, 13, 19, and 22 have been amended, and claims 29 and 30 have been added by Applicant. Claims 1-13 and 16-30 are pending.

Response to Arguments

2. Applicant's arguments filed November 13, 2007 have been fully considered. They are persuasive with regard to claims 1-12. They are partly not persuasive, and partly moot in view of the new grounds of rejection with regard to claims 13 and 16-30.

Applicants argue that the firmware of the invention includes multiple descriptors with pointers there between. The argument is supported by independent claim 1, but is not applicable to independent claims 13 and 22. Applicants argue that the second descriptor includes a number that identifies a path of interconnectivity of a resource within the system topology that is separate from the node number. The specifics of this argument are again supported by claim 1, but are not applicable to claims 13 and 22. These claims only recite a number that identifies path of interconnectivity, or positional placement. Applicants also argue that Krithivas does not disclose multiple descriptors. Examiner disagrees, since the firmware descriptor manifest and firmware image generated therefrom are applied to a plurality of components within a platform, and also to multiple platforms (clients connected to network); therefore it is maintained that not only are there multiple descriptors within the manifest and image for a particular platform, but there are also multiple images that may be considered to make up the multiple descriptors, for any client as desired.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 13, 16-20, 23-26, 28, and 29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 13 recites an article comprising computer-readable medium having means. The claim further recites the means is capable of being stored in a firmware. It is noted that since the claim is to an article comprising a medium having means, that firmware is not required to meet the claim, only that the means is capable of being stored in firmware. Therefore, the added limitation regarding the firmware does not appear to further limit the claim, and as such appears indefinite. Claims 16-20 and 29 incorporate this limitation by dependency.

5. Claim 23 recites "said data structure", and claims 24 and 28 recite "said traversal step", all of which lack proper antecedent basis. Claim 24 further recites "accessing a second data structure", which is unclear since claim 22 recited two data structures. Is the second data structure one of the two? Claims 25 and 26 incorporate the limitations of claim 24 by dependency.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 13 and 16-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krithivas et al., US 6,816,963 B1, in view of Sayles, US 6,549,963 B1, and further in view of Greenburg et al., US 6,970,451 B1.

8. As to claims 1, 13, 16, and 22, Krithivas discloses *an article comprising computer-readable medium readable by a computer having multiple processors and plurality of resources assigned to node groups* (see Abstract, Figs. 1 and 2), *means in the medium for determining topological levels of at least some resources*. See Abstract, col. 1 lines 49-52, col. 2 lines 39-59 (where a PMA builds a FDM that describes platform attributes, including SCSI and IDE), col. 4 lines 40-54, and col. 4 line 64 to col. 5 line 4. These descriptors are of "respective topological levels" because they describe the component and platform levels, and of various platforms of clients connected to the server's network. The descriptors of Krithivas describe "attributes", but do not necessarily teach *a means in the medium for determining performance of the resources.* However, Sayles teaches the use of firmware to initialize configuration settings that control performance as well as other characteristics of multiple devices attached to a network, the data of the configuration settings thus reading on the second descriptor (see Sayles col. 1 lines 51-56, col. 2 lines 26-33 ("During system initialization, the system may adjust settings in devices coupled to a bus to indicate communications characteristics that are supported by the devices."), col. 2 line 55 to col. 3 line 26 ("... communications characteristics ... may include ... the address space accessible by the devices ... whether special high-rate read or write transfers are supported ..."), and col. 5 lines 13-22 and 35-42). The BIOS in Sayles loads not only configuration information

that identifies performance of devices, but also the address space accessible by them (in addition to other characteristics), and thus Sayles also teaches what may be interpreted as multiple descriptors generated or produced by firmware. An artisan would have been motivated to add a second descriptor of performance of resources to the system of Krithivas because as taught by Sayles it would have provided the advantages of control over multi-device networks to maintain signal integrity, compensation for different types of power supplies for the devices, and also the ability to change characteristics for testing purposes (see Sayles col. 1 lines 38-42, and col. 5 line 65 to col. 6 line 24). It is apparent from col. 2 lines 21-25, and from the claims of Sayles (which neglect to recite AGP) that the teachings therein are not solely to AGP devices but rather to any system having communication channels with multiple devices. Thus it would have been obvious to one of ordinary skill in the art at the time of the invention to add the second descriptor produced by firmware, because it was a known method to control signal integrity, compensate for power supplies, and allow testing under changing characteristics.

9. Alternatively, since the language of claim 22 does not require that the first and second descriptors be produced by the same firmware, the combination of the references cited above may be motivated simply by incorporating their separate teachings into separate computers that are attached to a common network for the purpose of communicating. That is, each reference teaches why its own descriptor should be used in a computer. It would have been obvious to connect these computers

in a network, and thus in a single computer system, for the well known purpose of providing communication between those computers.

10. The added recitation that *the firmware is maintained as a data structure with a number that identifies path of interconnectivity* does not appear to further limit claim 13 (see 35 USC 112 rejection above). However, the associated limitation of *data structure includes an identifying number that identifies positional placement of a resource within the topology* is recited in claim 22. Regarding Krithivas, the firmware image therein is delivered to one of a possible number of clients, and thus would not only have to identify how to get it to the proper client, but how to get to components of that system, as it is a description of that system. It is not clear, however, whether Krithivas discloses that the firmware or data structure thereof includes a number that identifies the path or positional placement as recited.

11. Greenburg discloses an analogous network system in which firmware is used to identify paths (and thus equivalently, positional placement) in a system topology. See Greenburg col. 6 lines 44-59. Clearly since the system of Krithivas needs to be able to send the firmware image to the proper system in the network, and further to have that image properly operate elements within that system, and since Greenburg has taught that firmware is advantageously used to form paths in system because it has the knowledge of how the resources are used, it would have been obvious to one of ordinary skill in the art at the time of the invention to include the path/positional placement information (number) in the firmware/data structure of Krithivas.

12. As to claim 17, each node has an identifier in Krithivas.

13. As to claims 18 and 25, the descriptor of the prior art combination is selected from a group that includes descriptors of the recited elements.

14. As to claim 19, since the descriptors of Krithivas describe the hardware at each node, the interconnects are reflected as recited.

15. As to claims 20 and 26, the descriptor of Sayles may be considered part of the recited elements of the other descriptor in the combination, that of Sayles incorporating the latency as recited.

16. As to claims 21 and 27, since transfer rates are given by Sayles, the average latency which is directly calculable from this is reflected or maintained as recited.

17. As to claim 22, the Krithivas-Sayles prior art combination discloses the recited invention substantially as described above with regard to claim 13.

18. As to claim 23, traversing the data structure must be done in Krithivas to use the descriptor manifest to identify nodes and hardware therein.

19. As to claim 24, accessing a second data structure is disclosed in Krithivas since the descriptor manifest maps addresses.

20. As to claim 28, recursively accessing additional data structure levels is inherent to the extent recited since data is accessed at processor and memory levels.

21. As to claims 29 and 30, since any system such as in the prior art combination is necessarily a binary data system, the data therein may be considered as a string of octets as recited.

Allowable Subject Matter

22. Claims 1-12 are allowed.

Conclusion

23. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

24. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gary J. Portka whose telephone number is (571) 272-4211. The examiner can normally be reached on M-F 9:30 AM - 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hyung Sough can be reached on (571) 272-6799. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Gary J Portka
Primary Examiner
Art Unit 2188

February 25, 2008

GARY PORTKA
PRIMARY EXAMINER

Gary J Portka